

Volume 3 Issue 3

Summer 2003

Communicable Disease Control

UPDATE



MECKLENBURG COUNTY HEALTH DEPARTMENT



Things that Bite



Disease Detectives

In most cases, the mode of transmission for West Nile virus (WNV) is through the bite of an infected mosquito. The incubation period in humans is usually 3 to 14 days.

The West Nile virus can cause febrile illnesses usually lasting a week or less. Initial symptoms include fever, headache, malaise, arthralgia or myalgia, and occasionally nausea and vomiting; generally, there is some conjunctivitis and photophobia. Fever may or may not be diphasic. Rash is common in infections with West Nile virus.

All residents of areas where virus activity has been identified are at risk of getting an infection from WNV. Most people who are infected with the WNV will not have any type of illness. It is estimated that 1 in 150 persons infected with the WNV will develop a more severe form of disease; persons over 50 years of age have the highest risk of severe disease.

The transmission of Eastern Equine Encephalitis (EEE) is mosquito-borne, and the incubation period is usually 5

to 15 days. Most infections are asymptomatic; mild cases often occur as febrile headache or aseptic meningitis. Severe infections are usually marked by acute onset, headache, high fever, meningeal signs, stupor, disorientation, coma, tremors, occasional convulsions (especially in infants) and spastic (but rarely flaccid) paralysis.

According to health officials, more than 30% of those infected by EEE virus will die. EEE is a more serious virus than West Nile fever according to Dr. David Page of the Coastal Health District. Unlike WNV infection, where infected people might not have shown any symptoms, if you get EEE, you will be sick. 25% of North Carolina counties are showing EEE activity this year in one or more species (horses and/or birds).

All forms of arboviral encephalitis, not just WNV or EEE, are reportable in North Carolina. All suspect cases of arboviral encephalitis should be reported to the Health Department at 704.336.6438 as soon as possible.

Non-specific commercial testing has a high incidence of false positive results. Therefore, serological arboviral testing through the State laboratory is recommended for patients with one or more of the above clinical syndromes. This testing is free if done through the State Public Health laboratory.

IF YOU SUSPECT WEST NILE VIRUS OR EASTERN EQUINE ENCEPHALITIS IN A PATIENT:

Ambulatory patients should be sent to the Southeast Health Department at 249 Billingsley Road or the Northwest Health Department at 2845 Beatties Ford Road. Both sites are open Monday-Friday, 8 AM-4 PM. No appointment is necessary. Serum testing should be done on acute and convalescent serum. The patient MUST have a signed prescription ordering serologic testing for WNV or EEE. The prescription must indicate the onset date and identify the symptoms.

For questions, please contact Lorraine Houser at houselm@co.mecklenburg.nc.us or 704.336.6438.

From the Editor...

Several Health Alerts have been sent out to medical practitioners and facilities since the last *Update* was distributed. Topics included West Nile Virus, Monkeypox and SARS. If you would like to be included in our Health Alert E-mail distribution list, please contact Lorraine Houser at houselm@co.mecklenburg.nc.us or 704.336.6438.

Tick-borne Infections

The following is a case summary of a student who attended a university in North Carolina. The information was taken from ProMED-mail.

A 19-year-old college student died 27 May 2003 after returning home following completion of the spring semester. The death was unusual for spotted fever infections. The student never developed the rash common to spotted fever, making it harder for doctors to identify her ailment. On 8 May 2003 the student was treated with trimethoprim-sulfamethoxazole for presumed sinusitis at the university's Student Health Center. Later, doctors in her home state considered leukemia and meningitis. The diagnosis was not made until 21 May 2003. The death, originally reported as a result of Rocky Mountain Spotted Fever (RMSF), was later confirmed as human monocytic ehrlichiosis by Dr. Jay Sizemore, Chief Fellow, Division of Infectious Diseases, University of Alabama at Birmingham where the student was later transferred for care. Dr. Sizemore went on

to say the lack of rash in this student's case is not that unusual. Said Dr. Sizemore, "It is interesting that the student received trimethoprim-sulfamethoxazole for presumed sinusitis; this drug has anecdotally been associated with fulminant ehrlichiosis in adolescents in the pediatric infectious diseases literature. An association with sulfa drugs and more severe cases of other rickettsial diseases (RMSF, Mediterranean Spotted Fever) has been reported. As an aside, it is difficult to tease out the role of delayed diagnosis in these more fulminant cases."

RMSF, a tick-borne illness, is three times more common in North Carolina than any other state. It is caused by the bacteria *Rickettsia rickettsii*. "The entire Piedmont area of North Carolina has the tick that is responsible for the transmission of RMSF," said Dr. Ed Breitschwerdt, a professor at NC State University Veterinary School. He went on to say it is not known why the disease is more common in North Carolina than any other state.

At least 4-6 hours of tick attachment is necessary for transmission to occur. About 3-14 days after receiving a bite from an infected tick, victims experience a sudden onset of moderate to high fever, malaise, deep muscle pain, severe headache, chills and conjunctival injection. Three to five days after the onset of symptoms, a rash usually appears on the extremities and rapidly spreads over much of body including the palms of the hands and soles of the feet. The disease is difficult to diagnose since its early symptoms are common in other diseases.

Early diagnosis and proper treatment save lives. The usual drug of choice is doxycycline. Concurrent tick-borne infections should also be considered, e.g. ehrlichiosis and Lyme Disease, but tetracycline/doxycycline treats them as well.

For more information, contact Beth Quinn at guinnes@co.mecklenburg.nc.us or 704.336.5398.

Raccoon Latrines



A roundworm infection caused by *Baylisascaris procyonis* (BP) is fairly common in raccoons. Although human infection is rare, some children in the United States have died from this infection after exposure to raccoon feces found in their yards or playgrounds. Since 1981, 12 cases of severe or fatal BP encephalitis have been identified in the U.S.

Raccoons infected with BP can be found throughout the United States but the highest prevalence exists in the Midwest, Northeast, and West coast. Infected raccoons shed millions of eggs in their feces and these eggs can survive for years in some environments. Raccoons instinctively defecate in the same spot. This creates large piles of raccoon

feces called latrines. Raccoons defecate on rooftops, stumps, attics, woodpiles, decks and lawns near trees. Raccoon feces are usually dark, tubular, and have a pungent odor.

Children generally become infected by accidentally ingesting eggs from soil, water, hands or other objects that have been contaminated with raccoon feces. Once the eggs are swallowed, they hatch into larvae. Larvae travel to organs like the liver, brain, and spinal cord. Symptoms may include nausea, tiredness, liver enlargement, lack of coordination, lack of attention to their surroundings, loss of muscle control, coma and blindness. Persons at high risk include young children, developmentally disabled persons, hunters, trappers, taxidermists, and wildlife re-

habilitators.

How to Prevent Raccoon Roundworm Infection

- Avoid direct contact with raccoons and their feces.
- Discourage raccoons from living around your home by removing access to food.
- Clear brush in your yard.
- Raccoon feces should be removed carefully and burned, buried or sent to a landfill. Avoid contaminating hands and clothing.
- Report raccoon latrines found in parks or playgrounds.

For more information, contact Jane Hoffman at hoffmlj@co.mecklenburg.nc.us or 704.336.5490.

The Intranasal Flu Vaccine is Finally Here!

The Food and Drug Administration (FDA) approved the first intranasal influenza vaccine available in the United States for healthy people on June 17, 2003. *FluMist* is a trivalent, cold-adaptive, live attenuated influenza vaccine that will be available in physician offices and some pharmacies by late summer or early fall, in time for this year's flu season.

The intranasal delivery of *FluMist* represents an important new option for healthy people age 5 - 49 years of age that either wish to avoid the flu or are in close contact with persons at elevated risk for complications from influenza infection. The injectable inactivated influenza vaccine continues to be available and is indicated for persons aged 6 months and older, who are either healthy or have chronic medical conditions. The intranasal delivery system will be of special interest to the pediatric population who may fear needles more than the consequences of the illness.

FluMist will be administered on a two-dose schedule for children age 5 - 8 years of age who have not previously been vaccinated with *FluMist*.

This population should have two doses of the intranasal spray, 60 days apart. Children age 5 - 8 who have previously been vaccinated with *FluMist* and children and adults age 9 - 49 years of age require one dose of *FluMist*. The vaccine must be kept frozen and thawed prior to administration.

FluMist is not indicated for children less than 5 years of age or adults 50 years of age or older. It is contraindicated in persons with egg sensitivity, persons on aspirin therapy, individuals with a history of Guillain-Barre' syndrome and those persons with immune deficiency. The safety and efficacy of *FluMist* has not been established in pregnant women or for people with underlying medical conditions, including asthma or reactive airway disease. The vaccine should not be administered to these people.

The peak of influenza activity in the United States generally occurs between late December and early March. The best time to be vaccinated continues to be October and November. The Advisory Committee on Immunization Practices (ACIP) recommends the following persons should be vaccinated in October, while all other groups can be vac-

nated in November:

- Adults aged 50 and older
- Infants and children aged 6 through 23 months
- Anyone aged 2-49 years who is at increased risk for influenza-related complications
- Children less than 9 years of age who are receiving their first influenza vaccine
- Healthcare workers
- All household contacts of persons at high risk for influenza

All other groups can be vaccinated in November.

Vaccine manufacturers project a total of 80-85 million doses of influenza vaccine will be available for the 2003-2004-flu season. This total is 10-15 million doses below last years total, yet greater than the estimated 79 million doses actually sold to individuals in 2002.

For more information, contact Gail Mills at mills.gb@co.mecklenburg.nc.us or 704.336.5076.



FAQ

Q. What follow-up does the Health Department recommend for a school age child who has been diagnosed with Shigella?

A. The Health Department does not exclude children who have been diagnosed with Shigella, Salmonella or Campylobacter from school. Children who are symptomatic should be encouraged to remain at home as long as they are having symptoms and hygienic measures should be stressed. Follow-up stool culture tests are not required. However, if the school-age child attends an after-school daycare, different control measures may be necessary. For

more information on daycare exclusion policy, contact one of the CD nurses or check the Health Department's website at www.meckhealth.org and click on Communicable Disease Control and the Child Daycare Nurse Consultant Program.

Q. I diagnosed 3 patients with Lyme Disease but I was told by the CD Control that they did not meet case definition according to the CDC. What does that mean?

A. The MMWR Case Definitions for Infectious Conditions Under Public Health Surveillance (May 2, 1997), defines a confirmed case of Lyme Disease (used for national reporting pur-

poses and **not** intended to be used in clinical diagnosis) as 1) a case with erythema migrans (EM) (occurs in 60-80% of patients) or 2) a case with at least one late manifestation which includes rheumatologic, neurologic, and cardiac abnormalities that is laboratory confirmed.

Laboratory criteria for diagnosis includes isolation of *Borrelia burgdorferi* from a clinical specimen or demonstration of diagnostic IGM or IGG antibodies to *B. burgdorferi* in serum or CSF. A two-test approach using a sensitive enzyme immunoassay or immunofluorescence antibody followed by Western blot is recommended.

Pertussis Outbreak in South Carolina

State health officials in South Carolina have reported 41 confirmed cases of pertussis (whooping cough) after an outbreak was first identified in Georgetown County three months ago. Fifteen additional cases have been reported as probable pertussis and more than 300 close contacts to patients have begun preventive antibiotic treatment. The first cases were seen in early May in Georgetown and related cases have been identified in Georgetown, Horry, Williamsburg and Charleston counties. The outbreak has included all age groups and has involved several schools, daycares and many households. South Carolina reported 48 cases of pertussis in 2002.

Pertussis remains a significant health threat, particularly for infants under the age of twelve months who are too young to be fully protected by immunization. Severe cases may suffer pneumonia, seizures, brain damage and even death. While small outbreaks of pertussis are not uncommon around the country, the inclusion of school and day-

cares in the Georgetown County outbreak imply that young children are among the cases.

The increase in the numbers of pertussis cases may be due in part to lower immunization coverage due to exemptions and the increasing visibility of the anti-vaccine movement. Also, waning immunity in adolescents and adults contributes to the disease reservoir and becomes an important source of disease transmission in infants and children who are more susceptible to disease complications. Mild cases of pertussis frequently go undetected because the well-known symptoms of the classic illness are not present. Ironically, many people believe that pertussis has been eliminated since a vaccine exists for the illness.

Three licensed acellular pertussis vaccines are currently available for use in the United States:

- DAPTACEL (Aventis Pasteur)
- Tripedia (Aventis Pasteur)
- Infanrix (GlaxoSmithKline)

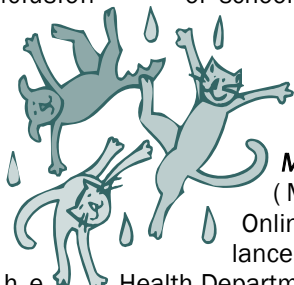
The newest of these vaccines, DAPTA-

CEL (Diphtheria and Tetanus Toxoids and Acellular Pertussis Vaccine Adsorbed) was recently licensed by the FDA and offers broad coverage against all severities of pertussis. Additionally, it has a thimerosal-free formulation.

The DtaP vaccination is routinely administered at 2, 4 and 6 months with a fourth dose given between 12 and 18 months. A fifth dose is needed between 4-6 years of age and is usually given before the child begins kindergarten. Nationwide, about 75% of children get vaccinated on schedule, with some states having a higher average than others. North Carolina currently immunizes more than 80 percent of their toddlers on time.

Note: North Carolina reported 75 cases of pertussis in 2001, 46 cases in 2002, and 71 cases so far in 2003.

For more information, contact Gail Mills at millsgeb@co.mecklenburg.nc.us or 704.336.5076.



M O S T
(Medical Online Surveillance Tool) is the Health Department's syndromic surveillance system developed in response to the events of 9/11. The purpose of **MOST** is to provide community surveillance for early recognition of disease outbreaks as well as to provide early detection of a bioterrorism event. As a result, we can provide health care providers and the general population with health information about our community. An unexpected and thoroughly welcome benefit is enhanced communication with health care providers and health care facilities in our county.

More on MOST

Information is already being collected from sentinel child daycares, Charlotte-Mecklenburg Schools, all of the county's hospital emergency departments and urgent care facilities, and Poison Control. In development are modules for veterinary and pharmacy reporting, increasing the numbers of child daycares reporting to us and collecting transport data from Medic.

MOST has been so successful in providing the Health Department with beneficial information that several health departments across the country have requested information on the surveillance system. Recent bioterrorism funding in North Carolina will allow for the expansion of **MOST** in our region and across the entire state.

MOST recently was honored by NACO, the National Association of Counties, and awarded its highest honor for a creative program that is a "responsible, responsive and effective tool of county government". The surveillance system was recognized as an innovative program that contributes and enhances county government in the United States.

For more information on **MOST**, go to the Health Department's website at www.meckhealth.org and follow the path to Communicable Disease Control and BT/Syndromic Surveillance or contact Lorraine Houser at houselm@co.mecklenburg.nc.us or 704.336.6438.

Reportable Diseases In North Carolina

Telephone reports are requested within 24 hours for diseases of unusual significance, incidence, or occurrence which may merit an epidemiological evaluation; and foodborne and waterborne outbreaks where a common source is suspected.

Telephone reports should include the following information:
disease; date of onset; patient name/address/phone number/age/race/sex; laboratory confirmation (yes or no); name and phone number of person making the report.

Report within 24 hours (by phone and card)

Anthrax	Granuloma Inguinale	Salmonellosis
Botulism	H. Influenzae, Invasive Disease	SARS
Campylobacter infection	HUS/Thrombotic Thrombocytopenic Purpura	Shigellosis
Chancroid	Hepatitis A	Smallpox
Cholera	Hepatitis B, Acute	Syphilis, All Stages
Cryptosporidiosis	Listeriosis	Tuberculosis
Cyclosporiasis	Measles (Rubeola)	Tularemia
Diphtheria	Meningococcal Disease	Typhoid, Acute
E. coli, Shiga toxin-producing	Plague	Vaccinia
Foodborne Disease	Polio, Paralytic	Vibrio Infections
Gonorrhea	Rabies, Human	Viral Hemorrhagic Fever
	Rubella	Whooping Cough



Report within 7 days (by card)

AIDS	Legionellosis	Rubella Congenital Syndrome
Brucellosis	Leptospirosis	Streptococcal Infection, Group A, Invasive Disease
Chlamydia	Lyme Disease	Tetanus
Dengue	Lymphogranuloma Venereum	Toxic Shock Syndrome
Ehrlichiosis, Granulocytic	Malaria	Toxoplasmosis, Congenital
Ehrlichiosis, Monocytic	Meningitis, Pneumococcal	Transmissible Spongiform En- cephalopathies (CJD/vCJD)
Encephalitis, Arboviral	Mumps	Trichinosis
Enterococci, Vancomycin resistant	Nongonococcal Urethritis	Typhoid Carriage
Hantavirus Infection	Psittacosis	Typhus, Epidemic louse-borne
Hepatitis B, Carrier	Q Fever	Yellow Fever
Hepatitis C, Acute	Rocky Mountain, Spotted Fever	
HIV infection		

Reporting Communicable Diseases – Mecklenburg County

To request N.C. Communicable Disease Report Cards, telephone 704.336.2817

Mark all correspondence “CONFIDENTIAL”



Tuberculosis:

TB Clinic
Mecklenburg County Health Department
251 Eastway Drive
Charlotte, NC 28213

704.921.6170
FAX 704.921.6133

Sexually Transmitted Diseases, HIV, & AIDS:

Regional Office HIV/STD Surveillance
Mecklenburg County Health Department
700 N. Tryon Street, Suite 214
Charlotte, NC 28202

704.336.6480
FAX 704.336.6200

All Other Reportable Communicable Diseases including Viral Hepatitis A, B & C:

Report to any of the following nurses:

Shannon Gilbert, RN
Nancy Hill, RN,
Jane Hoffman, RN,
Lorraine Houser, RN
Monica O'Lenic, RN
Elizabeth Quinn, RN
Communicable Disease Control
Mecklenburg County Health Department
700 N. Tryon Street, Suite 271
Charlotte, NC 28202

704.353.1270
704.336.5498
704.336.5490
704.336.6438
704.336.6436
704.336.5398
FAX 704.353.1202

Animal Bite Consultation / Zoonoses / Rabies Prevention:

Al Piercy, RS
Communicable Disease Control
Mecklenburg County Health Department
700 N. Tryon Street, Suite 272
Charlotte, NC 28202
or State Veterinarian, Lee Hunter, DVM
State after hours

704.336.6440
FAX 704.353.1202

919.733.3410
919.733.3419

Child Daycare Nurse Consultant:

Gail Mills, RN
Communicable Disease Control
Mecklenburg County Health Department
700 N. Tryon Street, Suite 271
Charlotte, NC 28202

704.336.5076
FAX 704.353.1202

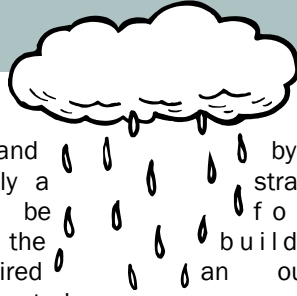
Suspected Food borne Outbreaks / Restaurant, Lodging, Pool and Institutional Sanitation:

Food & Facilities Sanitation
Mecklenburg County Health Department
700 N. Tryon Street, Suite 208
Charlotte, NC 28202

704.336.5100
FAX 704.336.5306

Mecklenburg County Health Department

Reading, 'Riting and...Bats



The call came in at 3:30 PM on Friday. The school nurse reported that she just stopped a student in the hall and he had a live bat in a box. He was planning to take the bat home. After further investigation, the nurse learned that several students and staff had close encounters with bats all week. Would CD Control be interested in the situation? "Um, yes, I believe so!" was the reply and the race was on!

In the next few hours we learned that the school found a large number of bats in the attic during the first week of the new school year. Earlier in the week, an unfortunate decision was made by the school's maintenance department to close off the attic, trapping the bats inside the building with nowhere to go for food. Bats, being nocturnal feeders, were unable to leave the building so they made their way inside one of the school buildings. Most of the bat activity occurred

early in the week and by Friday, only a stray bat could be found inside the building. CMS hired an outside critter control company that installed a bat eviction device that allowed the bats to escape the building but did not allow them to return to roost. Based on that information, it was decided that the school would not be closed down the following week but CD Control would be on site bright and early Monday morning.

At 7:15 AM on Monday, several members of CD Control, School Health and CMS officials met at the school to begin to conduct interviews of all students and staff. A questionnaire to determine the level of potential rabies exposure was distributed to 1400 students and staff. Results from the questionnaires showed that from the 1400 students and staff, only 400 denied seeing or

touching a bat. The remainder admitted to either seeing or having contact with a bat. As a result, 10 children were referred for post-exposure rabies prophylaxis. Eight bats were shipped to the North Carolina Public Health Laboratory and all test results were negative. Children who were absent were contacted at home after school hours and numerous parents were instructed to question their children carefully. As a result, only 2 children could not be located with the most likely explanation that they transferred out of the school district before the school year started.

CD Control was definitely interested in the bat situation.

For more information, contact Lorraine Houser at houselm@co.mecklenburg.nc.us or 704.336.6438.

DEET Use Recommended

From the North Carolina Department of Health and Human Services:

Mosquito bites may carry potentially serious viruses such as West Nile Virus and Eastern Equine Encephalitis (EEE) Virus, which can result in illnesses ranging from fever and aches to serious neurological diseases or even death. Avoid bites by staying indoors at dawn and dusk when mosquitoes are most active, covering your skin by wearing light-colored long-sleeved shirts and pants, and using mosquito repellent containing no more than 30% DEET (N,N-diethyl-m-toluamide or N,N-diethyl-meta-toluamide or N,N-diethyl-3-methylbenzamide). Children

should not go outside without applying DEET. However, the American Academy of Pediatrics recommends that DEET should not be applied to children more than once a day. It should not be used on babies under two months of age. Adults may use DEET repellents more often. Products with concentrations around 10% are effective for periods of approximately two hours, while concentrations of 21% to 25% provide 5 to 8 hours of protection and have been shown to be as safe as products with 10% or less. Some products that provide 5 to 8 hours of protection include Backwoods Cutter Unscented Insect Repellent®, OFF! DEEPWOODS Unscented®, and Bengal Insect Repellent®. Detailed DEET guidelines for

families and for schools are on the N.C. Public Health arbovirus website, www.epi.state.nc.us/epi/arbovirus.

As of September 1st, North Carolina has already had four human cases of West Nile Virus, one human case of EEE, and five human cases of La-Crosse Virus, with one death from West Nile. The best defense against mosquito-borne illness is preventing mosquito bites. Eliminate mosquito-breeding areas around homes by removing standing water and containers that can hold water, such as old tires.

This periodical is written and distributed quarterly by the Communicable Disease Control Program of the Mecklenburg County Health Department for the purpose of updating the medical community in the activities of Communicable Disease Control. Program members include: Health Director—Peter Safir; Medical Director—Dr. Stephen R. Keener; Health, Environmental Health Administrator—Bobby Cobb; Director, CD Control—Carmel Clements; Program Chief—Wanda Locklear; CD Control nurses—Shannon Gilbert, Nancy Hill, Jane Hoffman, Lorraine Houser, Monica O'Lenic, Elizabeth Quinn; TB Outreach nurses—Marcia Frechette (also Adult Day Health), Faye Lilieholm; Child Care nurse—Gail Mills; Rabies/Zoonosis Control—Al Piercy; Program Chief STD/HIV Surveillance—Carlos McCoy; Syphilis Coordinator—Ann White; DIS—Mary Ann Curtis, Michael Rogers, Lavon Sessoms; Regional Surveillance Team—Bobby Kennedy, Belinda Worsham; Office Assistants—Vivian Brown, Linda Kalman, Lisa Liner.

Lorraine Houser, Editor

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Communicable Disease Control
UPDATE

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Visit us on the World Wide Web at
www.meckhealth.org